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**REMARKS**

Claims 1-40 and 44-60 are pending in this application. By this Amendment, claims 41-43 are canceled without prejudice or disclaimer, claims 1, 6-8, 13-14, 16, 20, 21, 27-30, 45-47, 50-54, and 56, and the specification are amended, and claims 57-60 are added, as the Amendment filed on July 1, 2002 was not entered. Applicant notes that claims 44-60 have been renumbered in accordance to the renumbering requirement set forth by the Examiner in the Office Action dated April 1, 2002 as also previously stated on July 1, 2002. The amendments from July 1, 2002 are hereby included in this Amendment.

Support for new claims 57-60 can be found in the Specification including the original claims and Figures, for example, see pages 8-27. We also note that in each embodiment (Figures 3, 6, and 10) an aspheric lens with at least one diffractive optical element is illustrated. See Figure 3 reference number 30, Figure 6, reference number 24, and Figure 10, reference number 140. Reconsideration in view of the above amendments and following remarks is respectfully requested.

**I. Election Requirement**

The Office Action of September 13, 2002 required an election between Species I directed to Figure 3, Species II directed to Figure 6, and Species 3 directed to Figure 10. Applicant hereby elects Species II directed to claims 19-25 and 38-40. Applicant further respectfully submits that claims 1-14 are generic, as noted in paper number 7 which states that "a review of

the Application reveals that original claims 1-14 should have been indicated as generic and the Applicant should have been permitted to elect one of the remaining species.” We note that the Office Action further states on page 2, paragraph 2 that “no claims are generic.” However, Applicant respectfully submits that paper number 7 is correct as claims 1-14 are generic to all remaining claims for at least the reasons set forth in the numerous communications from Applicant to the Patent Office, all of which are incorporated herein.

As previously discussed on numerous occasions Applicants hereby traverse the Election Requirement and submit that as amended, Species II, which is drawn to a four lens system, is also generic to species III, which is drawn to a five lens system. Applicant further traverses the Election Requirement based on the grounds previously submitted and incorporated herein. Additionally, Applicant requests rejoinder and allowance of all pending claims should claims 1-14 be found allowable.

### **CONCLUSION**

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, **Laura L. Lee**, at the telephone number listed below.

Serial No. 09/514,250



Docket No. YHK-0039

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,  
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Clean Set of Amended Claims

02

1. (Thrice Amended) A projection lens system, comprising:  
a plurality of lenses, wherein at least one lens of the plurality of lenses comprises an aspheric lens; and  
at least one diffractive optical element formed on the aspheric lens.

~~1E~~

03

6. (Amended) The projection lens system according to claim 1, wherein one surface of the at least one diffractive optical element includes a pitch of grooves having a rotation symmetry on a spherical surface, wherein the pitch of the grooves changes as it goes from the center into the peripheral of the one surface.

~~1E~~

7. (Amended) The projection lens system according to claim 1, wherein one surface of the at least one diffractive optical element includes a pitch of grooves having a rotation symmetry on a plane surface, wherein the pitch of the grooves changes as it goes from the center into the peripheral of the one surface.

04

8. (Thrice Amended) A projection lens system, comprising:  
a plurality of refractive lenses, wherein at least one lens comprises an aspheric lens; and

~~1E~~

04  
end  
at least one diffractive optical element formed on the aspheric lens to correct chromatic aberrations at on axis and off axis.

13. (Amended) The projection lens system according to claim 8, wherein one surface of the at least one diffractive optical element includes a pitch of grooves having a rotation symmetry on a spherical surface, wherein the pitch of the grooves changes as it goes from the center into the peripheral of the one surface.

14. (Amended) The projection lens system according to claim 8, wherein one surface of the at least one diffractive optical element includes a pitch of grooves having a rotation symmetry on a plane surface, wherein the pitch of the grooves changes as it goes from the center into the peripheral of the one surface.

16. (Twice Amended) The projection lens system according to claim 15, wherein a first lens is an aspheric lens.

07 Sub E  
20. (Amended) The projection lens system according to claim 19, wherein said first, third and fourth lenses are designed to have an aspheric surface.

D1  
end

21. (Amended) The projection lens system according to claim 19, wherein one surface of said first lens is designed to have an aspheric surface and the other surface of said first lens is designed into a surface of the diffractive optical element.

27. (Amended) The projection lens system according to claim 26, wherein the first lens has an upper surface of convex shape, both sides of the second lens are convex, and the fourth lens includes a diffractive optical element.

D8

28. (Amended) The projection lens system according to claim 26, wherein one surface of said first lens is designed to have an aspheric surface and the other surface of said first lens is designed to have a diffractive optical element.

29. (Amended) The projection lens system according to claim 26, wherein one surface of said second lens is designed to have an aspheric surface and the other surface of said second lens is designed to have a diffractive optical element.

30. (Amended) The projection lens system according to claim 26, wherein one surface of said fourth lens is designed to have an aspheric surface and the other surface of said fourth lens is designed to have a diffractive optical element.

45. (Amended) The projection lens system according to claim 1, wherein the aspheric lens comprises a plastic material.

46. (Amended) The projection lens system according to claims 1, wherein the aspherical surface of the aspheric lens corrects a spherical aberration.

47. (Amended) The projection lens system according to claim 1, wherein at least one of the plurality of lenses comprises a glass material which provides at least half to the refractive power in the projection lens system.

50. (Amended) The projection lens system according to claim 8, wherein the aspheric lens comprises a plastic material.

51. (Amended) The projection lens system according to claim 50, wherein at least one of the plurality of lenses comprises a glass material which provides at least half of the refractive power in the projection lens system.

52. (Amended) The projection lens system according to claim 8, wherein the aspherical surface of the aspheric lens corrects a spherical aberration.

53. (Amended) The projection lens system according to claim 8, wherein at least one of the plurality of refractive lenses comprises a glass material which provides at least half of the refractive power in the projection lens system.

54. (Amended) The projection lens system according to claim 8, wherein at least one of the plurality of refractive lenses comprises a lens for correcting both a field curvature and an astigmatism.

56. (Amended) The projection lens system according to claim 55, wherein the lenses are refractive lenses and the at least one aspherical surface corrects chromatic aberrations on axis and off axis.



**B. Please added new claims 57-60 as follows:**

57. (New) The projection lens system according to claim 1, wherein one surface of the diffractive optical element includes grooves, a pitch of each groove being smaller as it goes from the center to a peripheral area.

58. (New) The projection lens system according to claim 1, wherein one surface of the diffractive optical element includes grooves, a pitch of each groove being larger as it goes from the center to a peripheral area.

59. (New) The projection lens system according to claim 8, wherein one surface of the diffractive optical element includes grooves, a pitch of each groove being smaller as its goes from the center to a peripheral area.

60. (New) The projection lens system according to claim 8, wherein one surface of the diffractive optical element includes grooves, a pitch of each groove being larger as it goes from the center to a peripheral area.